

# Exhibit 12



Making sense of AI

**Nest's new thermostat has a Soli gesture sensor built in**

Kyle Wiggers  
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October 12, 2020 7:00 AM

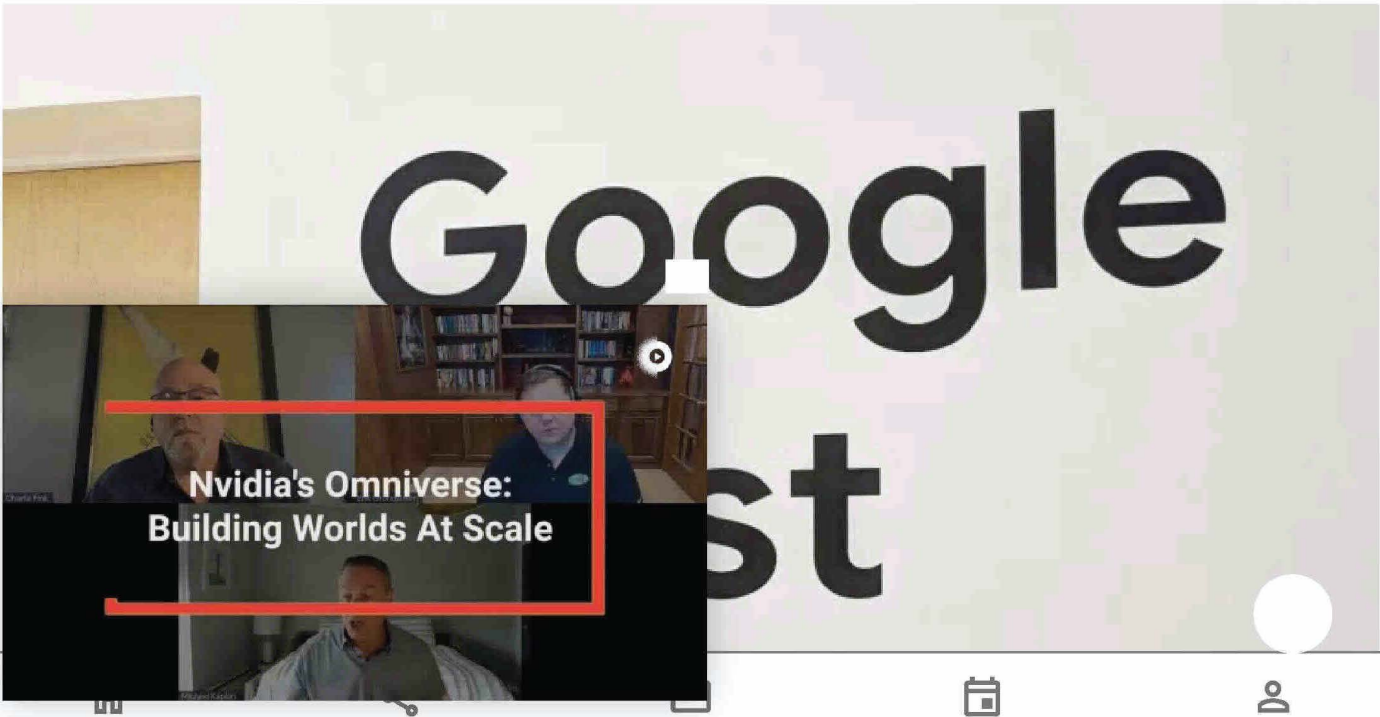


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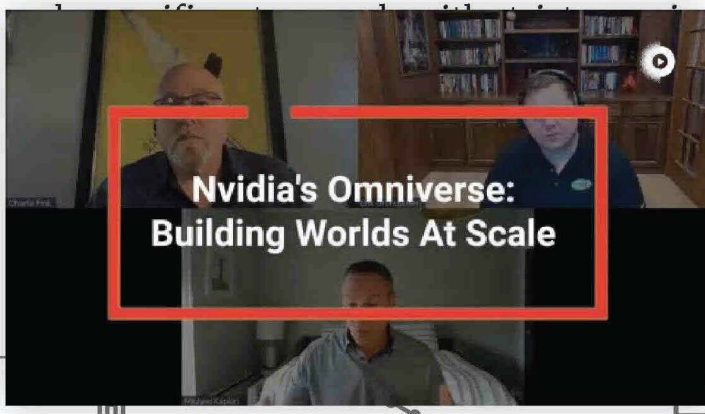
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[Nest](#) today introduced a new, more affordable thermostat to its lineup of smart home devices. Simply called the Nest Thermostat, it starts at \$129 — significantly cheaper than the \$250 current-gen Nest Thermostat — and leverages Google's Soli technology to recognize gestures behind its mirror-like display.

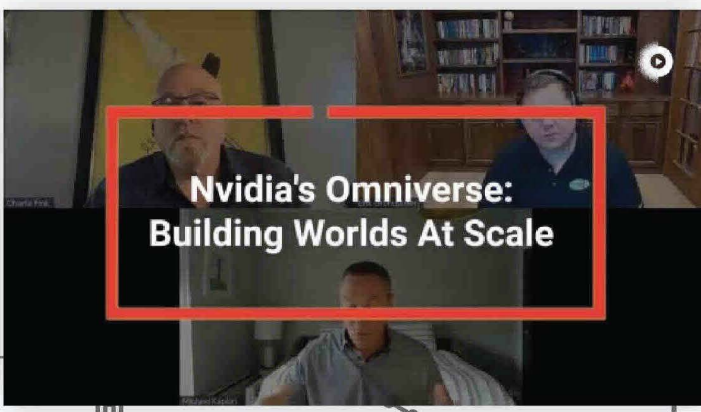
The new Nest Thermostat comes as many consumers are looking to conserve energy in their homes, both to save money and to help the environment. According to the [U.S. Commerce Department](#), energy spending plunged more than 13% in April — the steepest drop since the government began keeping records nearly 60 years ago. In a recent study conducted by the [Pew Research Center](#), 63% of Americans said they would be willing to

... environmental regulations.



## Nvidia's Omniverse: Building Worlds At Scale

The new Nest Thermostat, which is Energy Star-certified and built from recycled plastic, displays timely information, including the temperature and the current heating, cooling, and ambient modes. The display lights up when someone approaches and powers down when it's not in use, courtesy of a [Soli module](#) that acts as a real-time motion sensor.



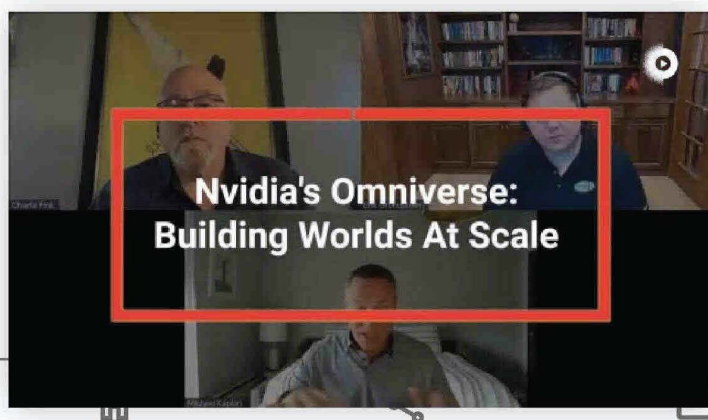
between Google's Advanced Technology and the chip inside the [Pixel 4](#), it contains a and positional information, in addition to fying AI models were trained using millions e supplemented with hundreds of hours of The models were optimized to run c ly

on the thermostat's low-power processor, allowing them to track up to 18,000 frames per second even when the main processor is powered down.

Thanks to Soli, the new Nest Thermostat recognizes swipes upward and downward, as well as forward selection motions in the air, eliminating the need for physical buttons on the face of the device. Fine-grained settings, controls for fans and other elements, and a dashboard that shows historical energy use have migrated to the Google Home app.

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Google has to certify Soli-equipped devices like the new Nest Thermostat with regulatory authorities (e.g., the U.S. Federal Communications Commission) in order to transmit at the required frequencies. When asked whether Soli-powered features would be available at launch in countries where the new Nest Thermostat is sold, product lead Ruchi Desai said Google will only release the thermostat in territories where it has gained regulatory approval. That's in contrast to the company's strategy with the Pixel 4, which didn't initially support Soli in every country.

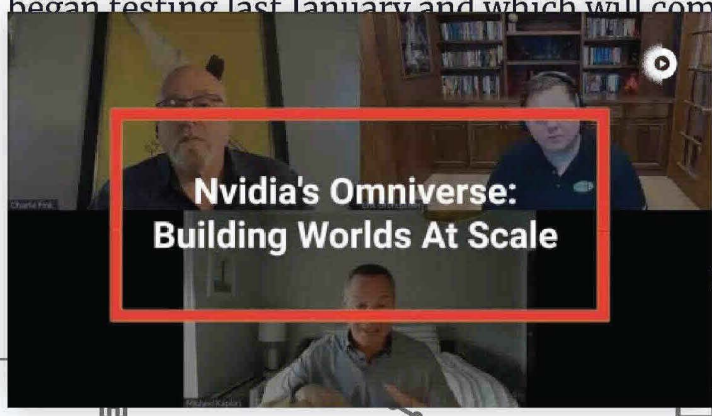




One of the new Nest Thermostat's highlights is a feature called Quick Schedule, which offers the ability to create temperature presets that reflect users' lifestyles and preferences. Beyond this, the thermostat leverages Soli and smartphone-dependent geofencing to automatically enable eco-friendly modes. There's also Savings Finder, which provides energy savings suggestions and can automatically apply those changes if users choose.

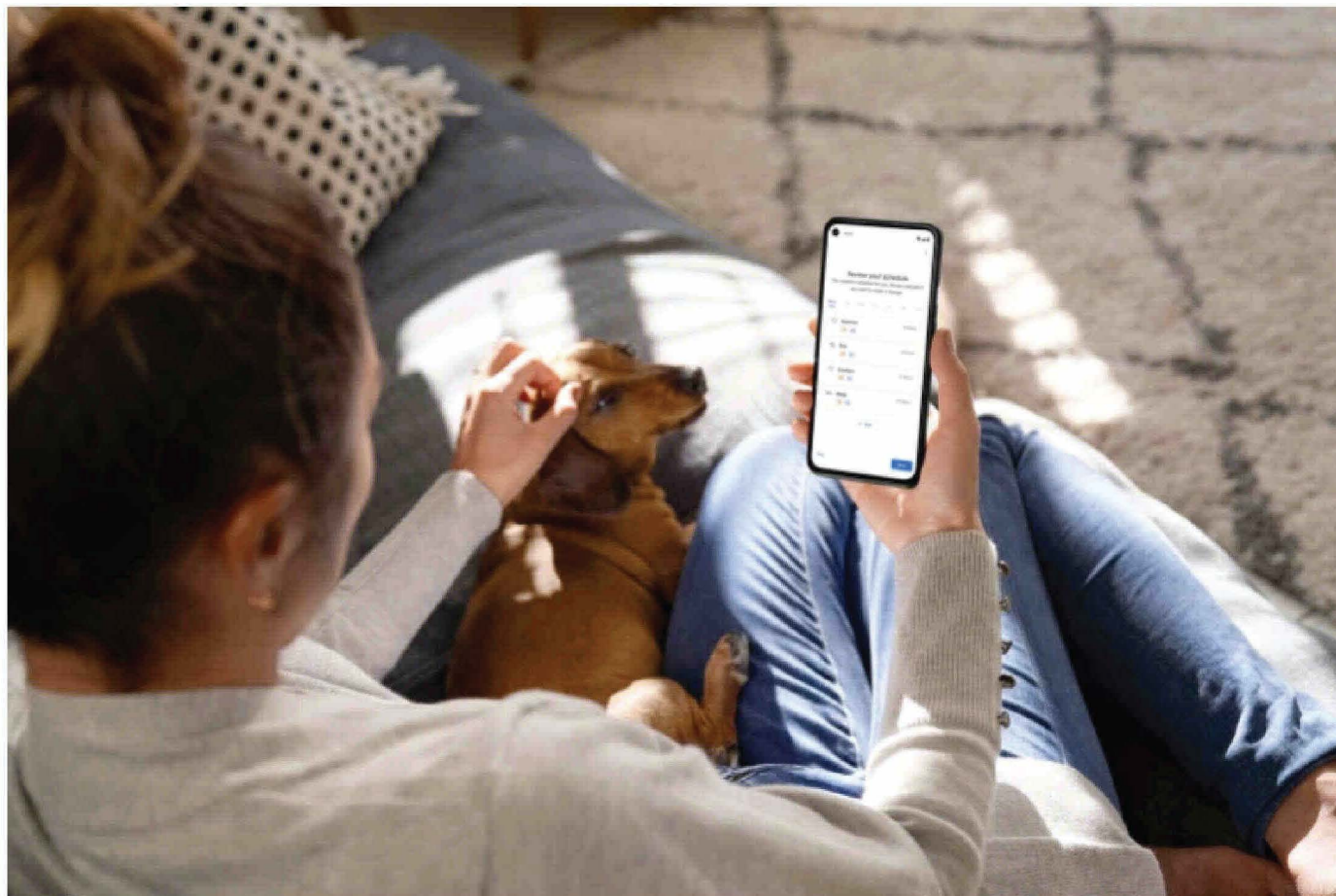
The new Nest Thermostat also ships with a feature that identifies unusual patterns related to HVAC systems. The feature, which Google began testing last January and which will come

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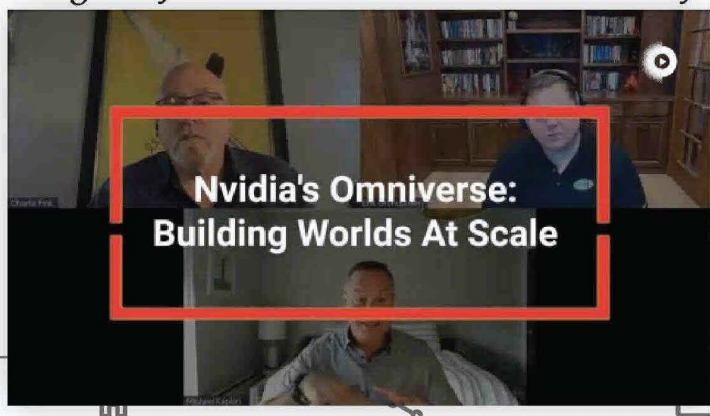


conclude there's a problem with the heating system.

Users receive notifications via emails that outline what Nest has detected and which system (heating or cooling) might have been the culprit, or they can sign up for a daily Nest Home Report that spotlights the HVAC alerts. If necessary, they can book an HVAC professional through gig marketplace Handy. This option is initially available in over 20 metro areas, including Atlanta, Boston, Denver, Las Vegas, and San Diego. Maintenance with Handy will include a general inspection of either the heating or cooling system and the Nest Thermostat.



Google says with continuous feedback the system will become better at detecting



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affixing it to walls will be sold separately for \$15 (\$20 CAD).

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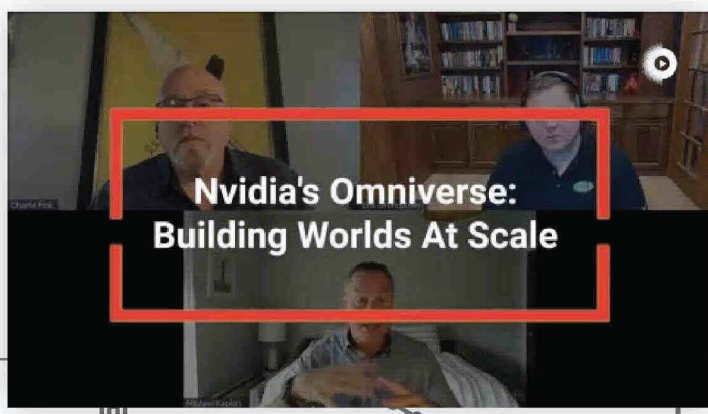
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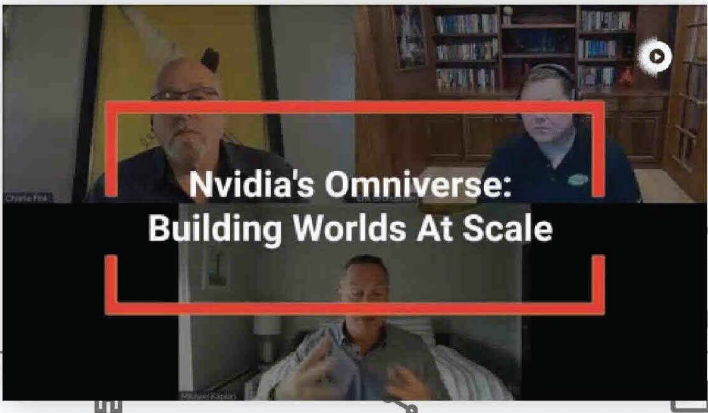
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...nity to re-invent itself  
web3. Here's how.



Kris McGuffie, Spectrum Labs

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May 04, 2022 06:20 AM



Image Credit: Getty Images

*Presented by [Spectrum Labs](#)*

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Online gaming has always suffered a bad rap in some circles. Some of the criticism is well deserved but not all of it. It is worth separating out the good from the bad, especially as the world hurtles towards web3 and the immersive environments in which future games will be played.

Savvy game brands are already focusing on the wellbeing and safety of their players, and it is proving to be a major differentiator for them. More gaming companies will follow and their investors, as well as for gamers



significant influence on our culture, and they significant resources towards reducing harmful onal, I applaud. But there is an opportunity

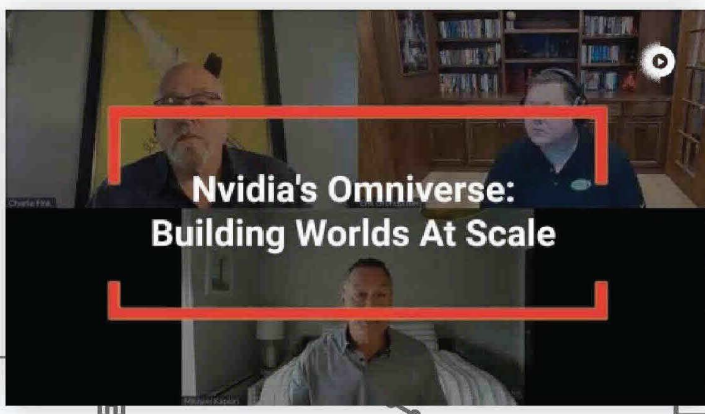
Rather than simply focusing on bad behavior, platforms would benefit from encouraging positive interactions. After all, anything that influences individual behavior and culture, and is aligned with how people build their identities, can be a significant resource for positive influence. There are already [established practices](#) for preventing harms in society, particularly with crime prevention, that are based as much on community-building behaviors and social cohesion as they are on mitigating problematic behaviors.

## The constructive influence of games

It is a common belief that [online gaming can be dangerous for kids](#), and many parents attempt to set rules as to how much time their children can play them. With the many valid concerns about gaming culture's influence on children, it can be difficult to see the constructive qualities of gameplay.

Some health care professionals have a different perspective, however, and they [incorporate gaming into their therapeutic toolkits](#). Gaming can teach people how to interact with others in non-confrontational ways, and it can also be used as a means of practicing healthy emotional modulation. Gaming is used to help people who have gaps in their ability to socialize. Research also shows online games provide "[accommodating places for people who are shy or socially inhibited](#)."

Games can teach kids of all abilities valuable life lessons, such as how to establish a goal and craft a plan to achieve it. Gamers often learn, research, and refine skills that will help solve challenges by breaking them down into discrete steps. Gaming can be approached and leveraged in ways that support positive individual development and connection within communities.



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the beneficial aspects of games, but she  
now some adolescents who spend a

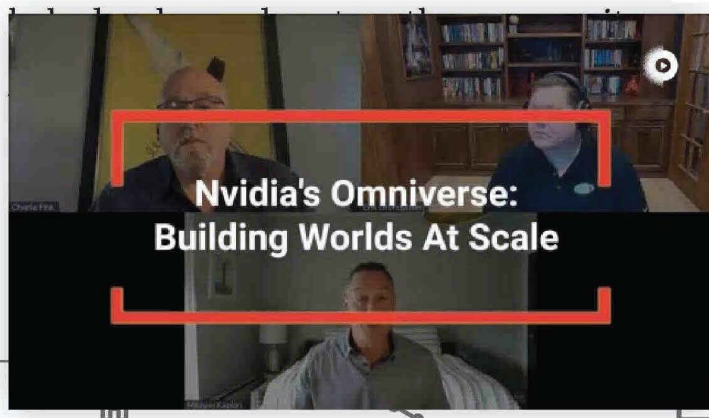
On a societal level, we have seen [how violent extremists use gaming](#) to promote their beliefs and attract supporters. [GamerGate](#) demonstrates the extent to which gaming culture can be exploited to fuel real-world harassment and hate-based movements. Amplification of toxic or violent language can normalize it to young minds and can encourage the transition from speech to action.

Online games have a unique challenge in that a preponderance of young people are on these platforms, and they are particularly vulnerable to outside influences. Part of that influence is due to their stage of development, but it is also due to the nature of gaming culture, which can be a large part of a person's identity.

## How gaming platforms can differentiate their brands

There is no shortage of games in the world, and competition for players is fierce. One way for platforms to attract users is to authentically prioritize the health of gaming communities. Trust & Safety technology is quite advanced, and a growing community of Trust & Safety professionals have formed associations to help all platforms create safe and welcoming communities.

Gaming companies have an opportunity to align their vision and mission with the types of people they want to attract. Platforms that opt to “own” the cultural significance of their games can influence society for the better by leaning into the positive side of gaming and taking steps to actively promote cooperative and respectful behavior. Embracing the positive is also good for the bottom line, as [some users quit platforms where they've been harassed](#). Those who have positive experiences are likely to stay and



encourage and amplify positive behavior, and in response to the [calls for government regulation](#) of

# Pragmatic steps for gaming platforms of all sizes

From every perspective, it makes good business sense for gaming companies to deploy technology, people, and structures to encourage good behavior by facilitating, rewarding, and amplifying positive interactions. This will require platforms to incorporate structural elements that govern how people engage with one another.

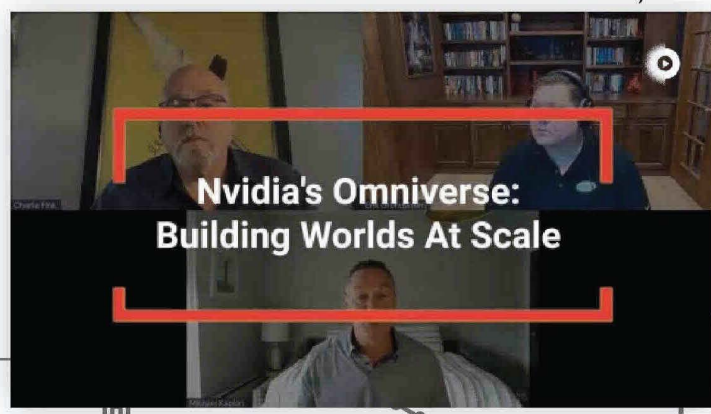
The first step is to be completely transparent as to the platform's mission and values, and how those align with the community guidelines and enforcement mechanisms. These guidelines should explicitly lay out what is considered not only acceptable but also constructive behavior, and enforcement actions that will be taken if a user violates platforms rules and norms.

If a platform doesn't have the budget for proactive detection and mitigation of bad behavior, its managers should consider limiting the quantity of user-generated content. Online risks are real for platforms and users alike. To manage these risks and build healthy communities, it makes sense to take a realistic approach to managing user-generated content, one that aligns with a company's capabilities.

All platforms require gatekeepers who facilitate the amplification of positive interactions as well as remove toxic content and suspend users for violations. In fact, the presence of human moderators is likely to be a requirement in the EU soon. Hiring, training, and supporting a skilled workforce for this purpose is necessary for Web3.

A proactive stance that embraces the positive contributions of online communities while curtailing their risks and harms will differentiate companies as we move forward into immersive web environments. Investors, customers, and employees are seeking

the online connections than ever before, in a human rights, individual expression, choice,



an researcher with a background in  
recently applying her experience to Trust

*Kris directs research on toxic behaviors and real-life harms, aligns behavioral definitions with human rights and free speech standards, and collaborates across teams to develop fresh approaches to identifying harmful dynamics on platforms.*

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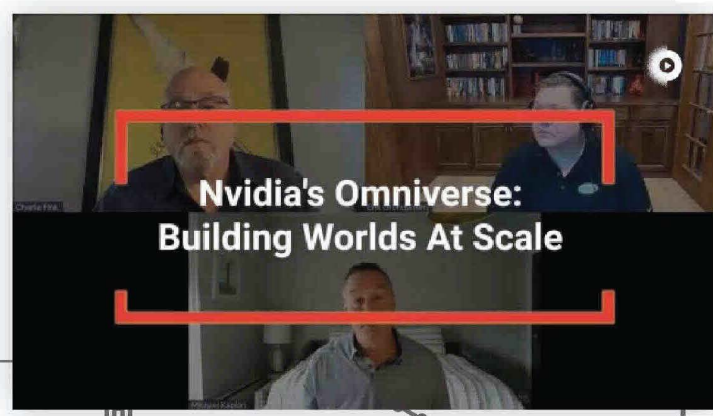
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